

MAY 31 1979

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ENERGY RESOURCES CONSERVATION BOARD

Calgary Alberta

DECISION ON THE APPLICATION OF ALBERTA ENERGY
COMPANY LTD. FOR AN INDUSTRIAL DEVELOPMENT
PERMIT TO MANUFACTURE SUBSTITUTE NATURAL GAS

3/4 Decision 79-3
Application 780619

1 THE APPLICATION AND HEARING

Alberta Energy Company Ltd. applied, pursuant to section 42, subsection (2) of The Oil and Gas Conservation Act (the Act) for an industrial development permit for a substitute natural gas (SNG) plant to be constructed near Bruderheim. The requested permit would authorize the annual use of 1.085×10^6 tonnes (2391×10^6 lbs) of by-products from the Petrochemicals Alberta Project (Petalta) benzene plant and 23.557×10^6 cubic metres (m^3) (836.13 MMcf) of gas as feedstock and fuel in the manufacture of $1.49 \times 10^9 m^3$ (52.89 Bcf) of SNG. The permit term requested is 20 years commencing 1 January 1983. The SNG would be sold to Texas Gas Transmission Corporation of Owensboro, Kentucky and would be delivered by substitution with gas. The removal of the SNG from Alberta was the subject of Application No. 780649 by AEC and was dealt with in Decision 79-4¹.

The application was heard by the Board at a public hearing in Calgary, Alberta, on 1 February 1979 with V. Millard, G. J. DeSorcy, P. Eng., and C. J. Goodman, P. Eng., sitting.

Participants at the hearing are listed in Table 1-1. Where the name of the company is abbreviated in this report, the abbreviation is shown in parentheses in the table.

2 INTERVENTIONS

The Board received 12 interventions to the application, the majority of which were filed for the purpose of cross-examination and argument. Union Gas Limited intervened for the purpose of cross-examination and argument but was not represented at the hearing. Evidence presented by Amoco and Turbo is summarized in the following subsections.

2.1 Amoco

Amoco expressed concern for its and other shippers' pentanes plus requirements for buffer and vapour pressure control to transport natural gas liquids (NGL) by pipeline to fractionation and marketing

1 Decision on the Application of Alberta Energy Company Ltd. Under The Gas Resources Preservation Act for a Substitute Natural Gas and Gas Removal Permit. Decision 79-4, April 1979.

TABLE 1-1 THOSE WHO APPEARED AT THE HEARING

| Principals and Representatives (Abbreviations used in Report) | Witnesses |
|---|---|
| Alberta Energy Company Ltd. (AEC) J. R. Smith | N. J. Lashuk, P. Eng. Dr. D. F. Brown R. A. Towler, P. Eng. J. A. Cran |
| Alberta and Southern Gas Co. Ltd. O. McGorman | |
| Alberta Gas Ethylene Company Ltd. F. R. Foran | |
| Amoco Canada Petroleum Company Ltd. (Amoco) H. L. Hooker | |
| Canadian Western Natural Gas Company Limited and Northwestern Utilities Limited R. Armstrong, P. Eng. | |
| Dome Petroleum Limited R. C. Muir | |
| Dow Chemical of Canada, Ltd. F. A. Sundberg, P. Eng. | |
| Gulf Canada Resources Inc. L. D. Horne | |
| Pan-Alberta Gas Ltd. M. Bradshaw | |
| TransCanada PipeLines Limited E. W. H. Mallabone | |
| Turbo Resources Ltd. (Turbo) D. I. MacLeod | |
| Energy Resources Conservation Board staff A. L. McLarty J. D. Dilay, P. Eng. A. R. Fraser | |

facilities in Sarnia, Ontario. Amoco stated that it and other shippers require daily 2384 m³ (15 000 bbl) of pentanes plus as buffer for the separation of NGL and other products in the pipeline and must retain the 2384 m³ (15 000 bbl) of pentanes plus presently contained in the NGL mix in order to satisfy vapour pressure requirements. Amoco stated that, while the by-products from the Petalta benzene plant could be used as an alternative buffer, it appeared from AEC's application that they would be consumed by the proposed plant, and therefore, would not be available.

2.2 Turbo

Turbo stated that it intends to file the second part of its application for a pentanes plus based refinery in the near future and the Board should reconsider the benzene and SNG projects in light of the Turbo application and any other applications which are or may be reasonably anticipated in the near future. The first part of Turbo's application was filed with the Board in January 1977 and the Board reported on it in ERCB Report 77-H².

3 DEFINITION OF ISSUES

The Board considers that the main issues relate to whether the proposed use of the energy resources would be in the public interest having regard for:

- the availability of the proposed feedstock and fuel,
- the efficient use of the energy resources,
- alternative uses for the proposed feedstock,
- the need to review the Petalta benzene project-AEC proposal in light of other proposals, and
- economic impact and benefit to Alberta.

The Board has also dealt with other matters which may be of importance to the Lieutenant Governor in Council in his review of the application. With respect to these issues the Board will briefly report the position of the applicant, any views expressed by the interveners, and the Board's own views, if any.

2 In the Matter of an Application of Turbo Resources Limited Under Section 42 of The Oil and Gas Conservation Act. ERCB Report 77-H, December 1977.

4 CONSIDERATION OF THE APPLICATION

4.1 Availability of the Proposed Feedstock and Fuel

AEC indicated that the SNG plant was specifically designed to accept the by-products of the Petalta benzene plant as feedstock and that the by-products would be purchased under a long-term arrangement with Petalta. The gas required would be purchased from Northwestern Utilities Limited.

The Board agrees that the by-products from the Petalta benzene plant would provide sufficient feedstock and fuel for the SNG plant. On the basis of its recent review of Alberta's 30-year requirements for energy and energy resources, the Board is satisfied that an adequate quantity of gas has been provided for in Alberta's requirements for the needs of the proposed plant.

4.2 Efficient Use of the Proposed Feedstock and Fuel

The proposed plant is expected to produce annually $1.316 \times 10^9 \text{ m}^3$ (46.72 Bcf) of SNG but depending on variations in feedstock composition and other factors may produce up to $1.49 \times 10^9 \text{ m}^3$ (52.89 Bcf). The minimum higher heating value of the SNG on a wet basis will be about 36.5 megajoules per cubic metre (975 Btu/scf).

The SNG plant includes five major processing steps: feed desulphurization, gasification, heat recovery and steam generation, methanation, and carbon dioxide removal. Feed desulphurization is required to ensure effective removal of sulphur from the feedstock prior to the gasification step in which the feedstock reacts with steam to form methane, carbon dioxide, hydrogen, and carbon monoxide. The hot effluent from the gasification reactor is sent to a waste heat recovery system where steam required for the process is generated. The hydrogen and carbon oxides from the gasification step are sent through two methanators which produce additional methane. Following methanation, the gas enters a carbon dioxide removal section.

AEC estimated the overall thermal efficiency of the process to be 92.6 per cent.

The Board believes that the proposed process is an efficient one and represents an efficient use of the energy resources.

AEC stated that, while other liquid hydrocarbons such as propane, butanes, or naphtha could be used as feedstock, SNG production might then be reduced if the new feedstock had characteristics differing from the design feedstock.

4.3 Alternative Uses for the Proposed Feedstock

Amoco stated that it and other shippers must retain the 2384 m³ per day (15 000 BPD) of pentanes plus presently contained in the NGL mix for vapour pressure control and require 2384 m³ per day (15 000 BPD) of pentanes plus or an acceptable substitute as buffer to transport NGL to Sarnia, Ontario by pipeline. Amoco stated that the use of benzene by-products as feedstock for the SNG plant would eliminate an acceptable alternative buffer because it would be entirely consumed by the proposed plant.

The Board is satisfied that upgrading the benzene plant by-products to SNG is in the public interest of Alberta when compared to the use of them as buffer for ultimate extraprovincial sales. In any case, there would not be a shortage of pentanes plus for mixing or buffering with NGL for many years even if the proposed project proceeds. The Board continues to believe that, if and when necessary and given proper economic incentives, other products such as refinery naphtha or possibly synthetic crude oil might serve as a buffer.

4.4 The Need to Review the Petalta Benzene Project-AEC Proposal in Light of Other Proposals

AEC indicated that, since approval for the Petalta benzene project had been granted, it should not be a subject of the proposed SNG plant application.

Turbo submitted that the combined projects of Petalta and AEC were of such magnitude that they would pre-empt any other possible pentanes plus based project in Alberta. Turbo stated that it intends to file a revised application for a pentanes plus based refinery and the Board should reconsider the benzene and SNG projects together with any other applications which may reasonably be anticipated in the near future including the revised application by Turbo.

The Board believes that the Petalta proposal for the use of pentanes plus to manufacture benzene has been adequately reviewed and is not an issue in the review of the subject application. Since the Board does not have an alternative proposal before it, it sees no reason to defer its decision on the subject application.

4.5 Economic Impact and Benefit to Alberta

AEC has estimated the project's impact on Alberta's economy to be some \$1358 million 1983 dollars. The Board believes that it would be easier to relate to the project's magnitude if the impact were measured in 1978 dollars and has, therefore, deflated AEC's estimate to \$857 million 1978 dollars. Details of the economic impact estimate are shown in Table 4-1.

In assessing the project's economic impact on the province, the Board compared the revenues Albertans would receive should the project be approved to those that would result from selling the same volume of

energy resources in extraprovincial markets. The Board is satisfied that, if the applicant achieves the SNG price shown in the application, the project would have a substantial incremental economic impact on the province and would, in this respect, be in the public interest.

4.6 Other Matters

The Board has briefly directed its attention to several other matters bearing on the appraisal of the application. These are summarized as follows:

- (a) The Board believes that the permit term requested of 20 years is appropriate for projects of this nature.
- (b) From evidence submitted by AEC and testimony given at the hearing, the Board concludes that AEC has arranged for the supply of necessary raw materials and fuel.
- (c) The Board believes that AEC has the technical, marketing, and financial background needed to proceed with the proposed project.
- (d) AEC estimated the total capital investment for its proposed plant to be \$162 million. The Board believes that if a permit were issued for the proposed project, AEC should be required to satisfy the Board, prior to the commencement of construction, that all financing arrangements had been completed.
- (e) The Board is satisfied that the public could participate in the project by purchasing shares in AEC.
- (f) AEC stated that the project will be Alberta-based and controlled. In consideration of the above, the Board believes that the management and control of the project is Canadian to the maximum practicable extent.
- (g) Neither AEC nor the Board has examined in detail the social impact of the proposed project. However, the Board believes that any impact would be minimal.
- (h) AEC estimated that the construction labour force for the proposed project would peak at 600 persons. Total permanent maintenance and operating personnel are estimated at 61 persons. Further details of the type of construction, maintenance, and operating personnel required are contained in the employment section of the application.
- (i) The plant would be constructed and operated in accordance with all provincial regulations respecting the environment and would comply with all provisions of The Clean Air Act and The Clean Water Act.
- (j) The Board agrees with AEC that SNG can provide the highest upgrading ratios for the benzene plant by-products but notes that these higher upgrading ratios are largely dependent upon achieving the forecast of SNG prices set out in the application. The Board believes that negotiation with a U.S. utility of a cost-of-service contract incorporating these prices is required to ensure the

economic viability of the plant, as it would be highly unlikely that a Canadian utility would be willing to pay the higher prices required to ensure the project's viability. The Board also notes that approval of the National Energy Board respecting authorization to export the SNG from Canada and approval of the U.S. authorities to import the said product would be required. The Board recognizes that marketing arrangements, still to be finalized, will determine the viability of this project but believes that if acceptable terms for the sale of the SNG can be achieved, the project would be in the Alberta public interest.

- (k) AEC stated that the proposed plant would be built adjacent to the Petalta benzene plant which is to be constructed in Township 55, Range 20, West of the 4th Meridian, and that it would be applying for municipal development and building permits. If a permit were issued, it would be suitably conditioned that the permittee satisfy the Board as to the precise location within Township 55, Range 20, West of the 4th Meridian.

5 FINDINGS AND DECISION

The Board finds that AEC's proposal represents an efficient use of energy resources, and that the proposed project is in the public interest of Alberta having regard for present and future availability of energy resources and for other factors. Accordingly, the Board is prepared, with the approval of the Lieutenant Governor in Council, to issue the requested permit to AEC. The permit would authorize the use of a maximum annual volume of 1.085×10^6 tonnes (2391×10^6 lbs) of by-products from the Petalta benzene plant and $23.557 \times 10^6 \text{ m}^3$ (836.13 MMcf) of gas as feedstock and fuel in the manufacture of $1.49 \times 10^9 \text{ m}^3$ (52.89 Bcf) of SNG in a plant near Bruderheim. The proposed permit would be in the form shown in the Appendix and subject to the conditions contained therein and to any others imposed by the Lieutenant Governor in Council.

Respectfully submitted,

V. Millard
Chairman

G. J. DeSorcy, P. Eng.
Vice Chairman

C. J. Goodman, P. Eng.
Board Member

Dated at Calgary, Alberta
this 6th day of April 1979.

APPENDIX TO DECISION 79-3 FORM OF PERMIT

IN THE MATTER of The Oil and Gas Conservation Act, being chapter 267 of the Revised Statutes of Alberta, 1970; and

IN THE MATTER of an industrial development permit to Alberta Energy Company Ltd. authorizing the use within Alberta of hydrocarbon by-products and gas produced in Alberta for the manufacture of substitute natural gas

INDUSTRIAL DEVELOPMENT PERMIT NO. AEC 79-1

WHEREAS Alberta Energy Company Ltd. has applied to the Energy Resources Conservation Board for an industrial development permit, pursuant to section 42, subsection (2), of The Oil and Gas Conservation Act, authorizing the use of hydrocarbon by-products from benzene manufacture and gas for the manufacture of substitute natural gas; and

WHEREAS the Board, upon inquiry into and hearing of the application, is of the opinion that the granting of this industrial development permit for the use of hydrocarbon by-products from benzene manufacture and gas, is in the public interest having regard to, among other considerations, the efficient use without waste of energy resources and the present and future availability of hydrocarbons in Alberta; and

WHEREAS the Lieutenant Governor in Council has given his approval, by Order in Council, numbered O.C. and dated

THEREFORE, the Energy Resources Conservation Board, pursuant to the provisions of section 42 of The Oil and Gas Conservation Act, being chapter 267 of the Revised Statutes of Alberta, 1970, hereby grants an industrial development permit to Alberta Energy Company Ltd. (hereinafter called "the Permittee") authorizing the use of hydrocarbon by-products from benzene manufacture and gas as raw material and fuel for the production of substitute natural gas, subject to the regulations and orders made pursuant to the said Act and to the terms and conditions prescribed in this permit as follows:

1. This permit is for the use by the Permittee of hydrocarbon by-products from benzene manufacture and gas in the annual production of approximately 1.49 billion cubic metres of substitute natural gas, generally as described in the application by the Permittee to the Board dated October 31, 1978.

2. The Permittee shall satisfy the Board, prior to 1 September 1979, with respect to the location which it has selected for its plant.

3. (1) Subject to the conformity by the Permittee with the terms and conditions hereof, this permit shall be for a term commencing on 1 January 1983 and ending on 31 December 2002.

(2) Notwithstanding subclause (1), this permit shall expire one year from the date hereof unless the Permittee satisfies the Board that the project will proceed.

4. (1) The annual quantity of hydrocarbon by-products and gas that may be used in the facilities referred to herein in the production of substitute natural gas shall not exceed:

(a) 1.085 million tonnes of hydrocarbon by-products, and

(b) 23.557 million cubic metres of gas.

5. All hydrocarbon by-products and gas used in the production of substitute natural gas pursuant to this permit shall be measured by or on behalf of the Permittee in a manner satisfactory to the Board, and the volumes of hydrocarbon by-products and gas used and the substitute natural gas produced in each month shall be separately reported to the Board in a manner satisfactory to the Board on or before the fifteenth day of the next ensuing month.

6. The Permittee shall obtain the approval of the Board of any major changes in design of the plant facilities.

7. (1) The Permittee shall satisfy the Board prior to 1 March 1980, that arrangements for the financing of its proposed project have been completed.

(2) The Permittee shall satisfy the Board prior to 1 March 1980, that construction of its proposed project has commenced or will commence not later than 1 June 1980, and that construction of the proposed facility will continue in accordance with the schedule described in the application dated 31 October 1978.

8. The Permittee shall satisfy the Minister of Business Development and Tourism, prior to 1 September 1979, and thereafter throughout the term of the permit, with respect to the use wherever practicable in the project, of Alberta

engineering and other professional services, and Alberta tradesmen and other construction personnel, and materials and supplies from Alberta.

9. The Permittee shall satisfy the Minister of Energy and Natural Resources, prior to 1 November 1982 with respect to the price to be paid for the hydrocarbon by-products and gas used in this project.

10. Notwithstanding the dates prescribed by clauses 2, 3, 7, 8 and 9 of this permit, the Board may, upon application by the Permittee, stipulate such later date or dates as appears to the Board appropriate in the circumstances.

11. The Permittee shall operate the facilities in a manner that results in

- (a) the maximum practically obtainable efficiency in the use of hydrocarbon by-products and gas for the manufacture of substitute natural gas, and
- (b) the maximum practical conservation of hydrocarbon by-products and gas.

12. The Permittee shall not

- (a) assign this permit, or
- (b) release from his control the plant, without consent in writing of the Board, which may, with the authorization of the Lieutenant Governor in Council, be given by the Board upon application therefor.

13. Where it appears to the Board or the Lieutenant Governor in Council that the Permittee has contravened or

failed to comply with any terms or conditions contained in this permit or any relevant statutes or regulations of Alberta,

- (a) the Board shall review the permit and with the approval of the Lieutenant Governor in Council may cancel the said permit or take such other remedial measures as considered suitable by the Board and the Lieutenant Governor in Council in the circumstances, or
- (b) the Lieutenant Governor in Council may amend, vary, add to or replace any terms or conditions contained in this permit.

14. Notwithstanding the provisions hereof, the Permittee shall comply with the provisions of any Act, regulation, order or direction governing the drilling for, production, conservation, gathering, transportation, processing, purchasing, acquisition, sale, measurement, reporting, testing, supply, or delivery of hydrocarbon by-products and gas within the Province.

MADE at the City of Calgary, in the Province of
Alberta, this day of

ENERGY RESOURCES CONSERVATION BOARD

Vernon Millard
Chairman

112-1-2
1/Alberta
ENERGY RESOURCES CONSERVATION BOARD

Calgary Alberta

DECISION ON THE APPLICATION OF ALBERTA ENERGY
COMPANY LTD. UNDER THE GAS RESOURCES
PRESERVATION ACT FOR A SUBSTITUTE NATURAL
GAS AND GAS REMOVAL PERMIT

3/ Decision 79-4
Application 780649

1 THE APPLICATION AND HEARING

Alberta Energy Company Ltd. (AEC) applied, pursuant to The Gas Resources Preservation Act (the Act) for a permit authorizing the following:

- (a) removal from the province of a total quantity of 29.8×10^9 cubic metres (m^3) (1057.7 Bcf) of substitute natural gas (SNG) at maximum daily and annual rates of $4.288 \times 10^6 m^3$ (152.2 MMcf) and $1.49 \times 10^9 m^3$ (52.89 Bcf), respectively
- (b) removal from the province of a total quantity of $2.254 \times 10^9 m^3$ (80.0 Bcf) of gas at maximum daily and annual rates of $3.218 \times 10^5 m^3$ (11.42 MMcf) and $0.1127 \times 10^9 m^3$ (4.00 Bcf), respectively
- (c) removal of SNG and gas for the 20-year period 1 January 1983 to 31 December 2002

The SNG would be sold to Texas Gas Transmission Corporation (Texas Gas) of Owensboro, Kentucky and would be delivered by substitution with natural gas. The SNG would be produced at a new plant which was the subject of Application No. 780619 by AEC for an industrial development permit under section 42 of The Oil and Gas Conservation Act. In its Decision 79-3¹, the Board stated that it was prepared, with the approval of the Lieutenant Governor in Council, to issue an industrial development permit to AEC authorizing the use of by-products from the proposed Petrochemicals Alberta Project (Petalta) benzene plant and gas to produce SNG. The SNG plant would be located adjacent to the Petalta benzene plant to be constructed near Bruderheim in Township 55, Range 20, West of the 4th Meridian. The gas proposed for removal would be used as fuel to transport the SNG beyond Alberta and would be obtained from AEC's own uncontracted reserves in the Suffield Field. The proposed gas volume represents AEC's maximum gas requirements for pipeline fuel beyond Alberta based on the most distant likely delivery point of the SNG to Texas Gas.

- 1 Decision on the Application of Alberta Energy Company Ltd. for an Industrial Development Permit to Manufacture Substitute Natural Gas. Decision 79-3, April 1979.

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The application was heard by the Board at a public hearing on 1 February 1979 with V. Millard, G. J. DeSorcy, P. Eng., and C. J. Goodman, P. Eng., sitting.

The Board received 14 interventions to the application, all of which were for the purpose of cross-examination and argument only. Union Gas intervened but was not represented at the hearing. Participants at the hearing are listed in Table 1-1.

2 DEFINITION OF ISSUES

The Act provides that the Board shall not grant a permit for removal of gas from Alberta unless in its opinion it is in the public interest to do so having regard to (a) the present and future needs of persons for gas within the province, and (b) the established reserves and trends in growth and discovery of reserves of gas in the province. While (a) and (b) above normally would be the main issues which the Board would consider in appraising a gas removal application, it does not believe that these are issues that must be considered in assessing an application for removal of SNG because SNG is not considered part of the natural gas reserves of Alberta. The Board notes that the interveners did not express concern with respect to these matters. Therefore, the Board believes that it should consider as issues:

- (a) the permit term,
- (b) the point of removal of the SNG and gas,
- (c) the source and availability to AEC of SNG and gas,
- (d) the effect the removal of gas would have on the Alberta gas surplus, and
- (e) other permit matters.

3 CONSIDERATION OF THE APPLICATION

3.1 Permit Term

AEC requested a 20-year permit term. The Board normally considers a 12 to 15-year term to be reasonable, unless the applicant can show that, under special circumstances, a longer term is desirable. The Board believes that AEC has demonstrated satisfactorily that, because of the special nature of the project, there is a need for a longer term. Therefore, if a permit were issued, the Board would be prepared to specify a 20-year term consistent with the term it has indicated¹ it would be prepared to grant for an industrial development permit for the SNG plant.

TABLE 1-1 THOSE WHO APPEARED AT THE HEARING

| Principals and Representatives (Abbreviations used in Report) | Witnesses |
|---|---|
| Alberta Energy Company Ltd. (AEC) J. R. Smith, Q.C. | N. J. Lashuk, P. Eng. Dr. D. F. Brown R. A. Towler, P. Eng. J. A. Cran |
| Alberta and Southern Gas Co. Ltd. O. J. McGorman | |
| Alberta Gas Ethylene Company Ltd. F. R. Foran | |
| Alberta Gas Trunk Line Company Limited F. R. Foran | |
| Amoco Canada Petroleum Company Ltd. H. L. Hooker | |
| Canadian Western Natural Gas Company Limited and Northwestern Utilities Limited R. Armstrong, P. Eng. | |
| Dome Petroleum Limited R. C. Muir | |
| Dow Chemical of Canada, Ltd. F. A. Sundberg, P. Eng. | |
| Gulf Canada Resources Inc. L. D. Horne | |
| Independent Petroleum Association of Canada A. E. Potter, P. Eng. | |
| Pan-Alberta Gas Ltd. M. Bradshaw | |
| TransCanada PipeLines Limited E. W. H. Mallabone | |
| Turbo Resources Limited D. I. MacLeod | |
| Energy Resources Conservation Board staff A. L. McLarty J. D. Dilay, P. Eng. A. R. Fraser | |

3.2 Point of Removal of the SNG and Gas

AEC stated that the removal point for the SNG and gas has not yet been finalized but that it would be one of the following locations:

- (a) the point at Empress which now exists on the TransCanada system, or
- (b) the point at which the Northern Border Pipeline system would cross the Alberta border.

AEC stated that it would be acceptable to condition any permit issued to require AEC to indicate to the Board, by a certain date, the location of the removal point in order for the permit to be effective. The Board believes that, if a permit were issued, such a condition would be appropriate.

3.3 Source and Availability to AEC of SNG and Gas

AEC stated that the SNG would be obtained from its proposed plant to be located adjacent to the Petalta benzene plant proposed for Township 55, Range 20, West of the 4th Meridian, but that the exact location had not yet been finalized. AEC stated that it would be acceptable to condition any permit issued to require AEC to indicate to the Board, by a certain date, the location in order for the permit to be effective. The Board believes that, if a permit were issued, such a condition would be necessary to designate the source of the SNG for the purposes of the permit.

AEC stated that the gas it proposes to remove would be obtained from its own uncontracted reserves in the Suffield Field. The Board is satisfied that such reserves are available and if a permit were issued, the Board would include a clause naming the Suffield Field as the source from which gas may be removed from the province.

With respect to the availability of SNG and gas to AEC, the Board is satisfied that AEC has made satisfactory arrangements for the supply of SNG and gas.

3.4 The Effect the Removal of Gas Would Have on the Alberta Gas Surplus

AEC stated that the production and removal of SNG will have no effect on the supply of natural gas in Alberta and would have no adverse effect on the public interest with regard to the future availability of natural gas.

The Board agrees with AEC that, since the SNG would not form part of Alberta's gas reserves used in the surplus tests, SNG removal does not lend itself to the Board's established procedures for the appraisal of a gas removal application and would have little effect on Alberta's gas

surplus. The Board believes that the proposed removal of SNG is a special case under the Act and does not propose to include SNG in its surplus tests.

With respect to the effect on Alberta's gas surplus of the proposed removal of gas, the Board has referred to its most recent calculations of Alberta's current and future surpluses and the gas available for contracting reported on in ERCB Report 78-G² which shows substantial surpluses in all three categories. The Board concludes that the effect on the surplus of the proposed removal of a maximum of $2.254 \times 10^9 \text{ m}^3$ (80.0 Bcf) of gas over the 20-year period 1 January 1983 to 31 December 2002 would be insignificant.

In addition, the Board notes that the volumes of gas requested by AEC relate to its estimate of its gas requirements for pipeline fuel from the Alberta border to the location at which Texas Gas would take delivery of the SNG. AEC stated that, since the location of delivery had not yet been finalized, the estimate is based on Niagara Falls as the most distant likely delivery point, and therefore, represents a maximum. AEC stated that, if the delivery point were the mid-west United States rather than Niagara Falls, its fuel requirements would be substantially less and agreed that the authorized gas removal volume should be reduced accordingly. If a permit were issued, the Board believes that it would be appropriate to include a clause which required the permittee to satisfy it with respect to the delivery point and the associated fuel gas requirements, and would stipulate a volume less than the requested volume if it appeared to the Board reasonable to do so under the circumstances.

3.5 Other Permit Matters

The Act provides that a permit may include a condition that the permittee will supply gas to any Alberta community or consumer that is willing to take delivery of it at a point on the pipeline transmitting the gas, and that, in the opinion of the Board, can reasonably be supplied by the permittee. AEC stated that it would be prepared to so provide SNG or gas to Alberta consumers at an appropriate price.

The Board believes that, if a permit were issued, it should include the type of condition described above, similar to that which is included in all existing permits for the removal of gas. The Board believes, however, that if the SNG and gas were to be removed from Alberta by a pipeline under other than Alberta jurisdiction, and if the interconnection of those facilities with The Alberta Gas Trunk Line Company Limited's

2 In the Matter of an Application of TransCanada PipeLines Limited for Removal of Gas Under The Gas Resources Preservation Act. ERCB Report 78-G, June 1978.

facilities was at a location considerably distant from the Alberta border, the permittee could have difficulty in supplying SNG or gas to an Alberta community or consumer from the pipeline unless prior arrangements were made between the permittee and the owner of the pipeline. Accordingly, the Board believes that, if a permit were issued, it should be conditioned to provide that the permittee shall satisfy the Board that it has made suitable arrangements with the owner of the pipeline to supply SNG or gas to Alberta consumers from the pipeline.

4 MATTERS WHICH MAY BE OF CONCERN TO THE GOVERNMENT

A matter raised at the hearing by Turbo related to the sharing among all gas producers within Alberta of incremental revenues accruing from export sales as opposed to serving domestic markets. Under cross-examination, AEC stated that, since the export price of SNG is based on a cost-of-service basis rather than established by the Federal Government, no sharing of revenues is anticipated. The Board does not consider this matter as relevant to its consideration of the application but believes the government should be aware that the subject was raised at the hearing.

5 FINDINGS AND DECISION

The Board finds that the proposed removal of SNG and gas would be in the public interest and that AEC would have the applied-for volumes available to it.

Accordingly, the Board is prepared, with the approval of the Lieutenant Governor in Council, to issue a permit to AEC authorizing the removal of the requested volumes of SNG and gas. The proposed permit would be in the form shown in the Appendix and subject to the terms and conditions therein contained as well as any other conditions imposed by the Lieutenant Governor in Council.

Respectfully submitted,

V. Millard
Chairman

G. J. DeSorcy, P. Eng.
Vice Chairman

C. J. Goodman, P. Eng.
Board Member

Dated at Calgary, Alberta
this 6th day of April 1979.

IN THE MATTER of The Gas Resources Preservation Act, being chapter 157 of the Revised Statutes of Alberta, 1970; and

IN THE MATTER of a permit to Alberta Energy Company Ltd. authorizing the removal of substitute natural gas and gas from the Province

PERMIT NO. AEC 79-1

WHEREAS Alberta Energy Company Ltd. has applied to the Energy Resources Conservation Board for authorization to remove from the province gas and substitute natural gas being a mixture containing a substantial amount of methane, which for the purposes of the Act is considered to be gas; and

WHEREAS the Board, upon inquiry into and hearing of the application, has found that Alberta Energy Company Ltd. appears to have made arrangements to acquire property in gas within the Province and proposes to remove such gas from the Province and that the provisions of The Gas Resources Preservation Act affecting the application have been complied with; and

WHEREAS the Board is of the opinion that the granting of the application for the removal of gas from the Province is in the public interest having regard to the present and future needs of persons within the Province and to the proved reserves and the trends in growth and discovery of reserves of gas in the Province; and

WHEREAS the Lieutenant Governor in Council has given his approval, by Order in Council, numbered O.C. and dated .

THEREFORE, the Energy Resources Conservation Board, pursuant to The Gas Resources Preservation Act, being chapter 157 of the Revised Statutes of Alberta, 1970, hereby grants a permit to Alberta Energy Company Ltd. (hereinafter called "the Permittee") authorizing the removal of gas from the Province, subject to the regulations and orders made pursuant to the said Act and to the terms and conditions prescribed in this permit as follows:

1. Subject to the conformity by the Permittee with the terms and conditions hereof, this permit shall be operative for a term commencing on 1 January 1983 and ending on 31 December 2002.

2. The quantities of gas that may be removed from the Province pursuant to this permit shall not exceed

(a) from the source prescribed by clause 3 (a)

(i) a total of 29.8 billion cubic metres, and

(ii) during any consecutive 24-hour period, or any consecutive 12-month period ending on 31 December, 4.288 million cubic metres, and 1.49 billion cubic metres, respectively,

and

(b) from the source prescribed by clause 3 (b)

- (i) a total of 2.254 billion cubic metres, and
- (ii) during any consecutive 24-hour period, or any consecutive 12-month period ending on 31 December, rates limited by field productivity and good engineering practice, but in a 24-hour period such rates shall not exceed 321.8 thousand cubic metres, and in a 12-month period such rates shall not exceed 112.7 million cubic metres.

3. Subject to clause 4 of these terms and conditions, the Permittee may remove or cause to be removed from the Province under the authority of this permit, only gas acquired or produced from the following sources:

- (a) the plant authorized by Industrial Development Permit No. AEC 79-1, and
- (b) the Suffield Field.

4. (1) For purposes of this permit, gas acquired in Alberta by the Permittee, from sources other than the sources named in clause 3 may, subject to the provisions of subclauses (2), (3) and (4), be removed from the Province in substitution for gas produced or obtained from the sources named in clause 3.

(2) The total volume of gas removed from the Province during each 12 month period ending 31 December, shall not exceed the total volume of gas actually produced and delivered to the Permittee from the sources named in clause 3.

(3) Gas acquired by the Permittee from sources other than from sources named in clause 3, shall be deemed to be first used to supply sales to consumers, communities and

utilities in Alberta, pipeline fuel and losses, and fuel and shrinkage at reprocessing plants in Alberta.

(4) For the purposes of this clause, all volumes shall be balanced on an energy basis.

5. (1) Notwithstanding any other provision hereof, no gas shall be removed from the Province by the Permittee under authority of this permit, until the Permittee has satisfied the Board as to

- (a) the location of the source of gas authorized by clause 3(a);
- (b) the facilities to be utilized to remove the gas from the Province;
- (c) the point at which the gas is to be removed from the Province; and
- (d) the quantity of gas required for pipeline fuel.

(2) Where the Board is satisfied as to any matter prescribed by subclause (1), it may, by stipulation hereto, prescribe

- (a) the location of the plant to be the source of gas authorized by clause 3(a);
- (b) the facilities to be utilized to remove the gas from the Province;
- (c) the point at which the gas is to be removed from the Province; and

- (d) such lesser volumes of gas which may be removed from the Province, as may appear to the Board to be appropriate in the circumstances.

6. (1) All gas removed from the Province pursuant to this permit shall be measured by or on behalf of the Permittee by master meters approved by the Board and located at the points at which gas is delivered in accordance with the approved point of removal referred to in clause 5.

(2) The specific gravity and higher heating value of all gas delivered through the facilities referred to in clause 5 shall be measured by or on behalf of the Permittee at the points at which gas is delivered by the said facility.

(3) The measurements required by this clause shall be made in a manner approved by the Board and shall be reported monthly in a manner approved by the Board.

7. All quantities of gas for the purpose of this permit shall be referred to a 101.325 kilopascals pressure base and a 15 degrees Celsius temperature base.

8. Notwithstanding any provisions of any contract for the purchase or other acquisition of gas, the Board may require the extraction of any substance or substances except methane from any gas before its removal from the Province pursuant to this permit.

9. The Permittee shall supply gas at a reasonable price to any community or consumer within the Province, or to any public utility requiring gas for such community or consumer that is willing to take delivery of the gas at the facility or at a point on the pipeline transmitting the gas, and that, in

the opinion of the Board, can reasonably be so supplied by the Permittee.

10. If any community or consumer or public utility is willing to take delivery of gas pursuant to clause 9 and agreement on the price to be paid for the gas cannot be reached, the price to be paid shall be determined by the Public Utilities Board on the application of an interested party, and the part of the price attributable to transportation shall be based on the assumption that the gas has been supplied from the capable source or sources available to the Permittee nearest to the point of delivery.

11. Notwithstanding the provisions hereof, the Permittee shall comply with the provisions of any Act, regulation, order or direction governing the drilling for, production, conservation, gathering, transportation, processing, purchasing, acquisition, sale, measurement, reporting, testing, supply, or delivery of gas within the Province.

MADE at the City of Calgary, in the Province of Alberta, this day of

ENERGY RESOURCES CONSERVATION BOARD

Vernon Millard
Chairman

